

BrunWord

ROM

(Mk4 Supplement)



Brunning



Software

BrunWord ROM Mk 4

This supplement manual covers all the extra features that have been added to the original ROM for mark 2, mark 3 and mark 4 updates. Please refer to the main manual for all other instructions. It is very important for you to read through pages 3 and 4 of the main manual before fitting the ROM, and if you are not familiar with BrunWord then you should work through TUTOR1 to get a feel of the programme before you start. Once this is done you can follow the instructions in this manual to experiment with the various printing facilities.

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Important Changes

Headline justification has been extended so that it now recognises J4, J5, J6 and J7. This means that existing Headline files (such as HEADEX.96) which use H-INCODE J3 and an ordinary INCODE J4 will need every J3 changed to J7. The file will not print correctly until this is done.

The addition of so many extra fonts has required a slight reorganisation of the System 2 font numbering. In the mark 2 ROM when the fonts were used in Headline they were numbered from 30 to 39 which only allows for 10 fonts. In the mark 3 and mark 4 ROMs these are numbered from 130 onwards. This means that any existing files using font numbers 30 to 39 will need this to be modified to 130 to 139. Files where the font name is specified within the text will print correctly with no changes.

The mark 2 ROM does not respond correctly to Star font numbers. This has been corrected with the mark 3 and mark 4 versions, and the numbers extended by 10 so that all 20 fonts for 24 pin downloading can be specified as having the Star fixed space.

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1. Printing Decision

Once you have become acquainted with the word processing facilities of BrunWord, you will want to put your skills to practical use. This will inevitably involve printing documents. The BrunWord Elite Mark 4 ROM Module has several different ways of approaching each task. This chapter is written to help you understand why there are different ways and to help you decide which could be best for your particular setup.

One of the main attractions of the Mark 4 ROM module is that its internal data banks include 25 high quality fonts, four of which are our new intelligent script fonts. All 25 fonts are designed for dot matrix printers but can be used on any printer that has an Epson 9 pin or 24 pin mode of operation.

It is impossible to list all the different printer type numbers, but with a little guidance your printer manual should provide the information. The first step is to decide which type of printer you have. There are four main categories, dot matrix, ink jet, laser jet and daisy wheel. The printer manual should tell you which of these your printer is in.

Dot Matrix Printers

These printers have two common modes of operation IBM and Epson. The BrunWord ROM will only work with printers that have an Epson mode but this is extremely unlikely to be a problem with this type of printer, as all modern types have both these modes.

Read the printer manual and ensure that the printer is set to the Epson mode.

Ink Jet and Laser Jet Printers

Ink Jet and Laser Jet printers vary considerably. It not surprising that Epson printers of this type usually have an Epson mode while HP printers almost invariably do not. Other makes include Epson features in some models and not in others. The printer's manual should clarify whether your printer can be set to an Epson mode. Epson FX... or RX... means that it is 9 pin compatible, while Epson LQ... means that it is 24 pin compatible. If the subject is totally avoided then you must assume that Epson mode is not available.

BrunWord ROM modules will only operate correctly with printers that have an Epson mode and which are set to this mode.

Ensure that the printer is set to its Epson mode. If there is a choice of Epson FX... or Epson LQ... then choose the latter as this gives much better quality printing.

Daisy Wheel Printers

These usually do not have an Epson mode so it is unlikely that this type of printer will be suitable for use with the BrunWord Elite ROM Module.

9 Pin or 24 Pin

Having decided that your printer is Epson compatible and ensured that it is set to this mode, you next need to establish whether it is a 9 pin or 24 pin printer (or for ink jet and laser printers, which emulation it has).

The 9 or 24 pins is the number of pins in the print head of the dot matrix printer. Early printers of this type were always 9 pin. Later when the technology improved, the number of pins was increased to 24, which significantly improves both the speed and the quality. The manual of a dot matrix printer will tell you the number of pins in the print head.

Ink jet and laser printers have an entirely different arrangement and may have the equivalent of 50 or more 'pins'. However, when these printers are used in the Epson mode they emulate (or pretend to be) either a 9 pin or a 24 pin printer. Epson FX... or RX... are used to describe 9 pin emulation, while LQ... describes 24 pin emulations.

The BrunWord Elite ROM has two fundamental ways of using its internal high quality fonts. It can either download the font to the printer and control how the printer uses it, or it can laboriously control every single dot that the printer prints. The first system can only be used with 24 pin printers. The second is used mainly with 9 pin printers but can also be used with 24 pin printers to gain special effects.

Refer to section 3 if your printer is or is equivalent to a 9 pin dot matrix printer. For 24 pin printers or equivalent refer to section 4.

2. Mk 4 ROM Fonts

There are a total of 25 high quality fonts stored in the Mark 4 BrunWord Elite ROM Module. These can all be used with 9 pin and 24 pin printers but some are too big to be used in the 24 pin download mode. Below is a summary of the parameters of each font.

Name	Height dots	Headline Mode			24 Pin Download		
		Passes	Sys 2	Display	Possible?	Sys 2	(Star)
FINELINE	24	4	130	=0	Yes	0	(20)
MIDLINE	21	4	131	=1	Yes	1	(21)
SLIMLINE	16	2	132	=2	Yes	2	(22)
FINETYPE	24	4	133	=3	Yes	3	(23)
MIDTYPE	21	4	134	=4	Yes	4	(24)
SEMITYPE	16	2	135	=5	Yes	5	(25)
COMPUT	24	4	136	=6	Yes	6	(26)
HEAVY	24	4	137	=7	Yes	7	(27)
CHELMER	32	4	152	?2	No	-	-
CLACTON	32	4	153	?3	No	-	-
CHELMERD	24	4	138	=8	Yes	8	(28)
CLACTOND	24	4	139	=9	Yes	9	(29)
FINEFORM	24	4	140	>0	Yes	10	(30)
MIDFORM	21	4	141	>1	Yes	11	(31)
SEMIFORM	16	2	142	>2	Yes	12	(32)
BOLDFORM	24	4	143	>3	Yes	13	(33)
NTSCRIPT	24	4	144	>4	Yes	14	(34)
NBSCRIPT	24	4	145	>5	Yes	15	(35)
OHSCRIPT	24	4	146	>6	Yes	16	(36)
MHSCRIPT	21	4	147	>7	Yes	17	(37)
POSTER-D	24	4	149	>9	Yes	19	(39)
POSTER	32	4	150	?0	No	-	-
ROCKBOLD	32	4	151	?1	No	-	-

MFIXTYPE	21	4	148	>8	Yes	18	(38)
MFIXLINE	21	4	152	?2	Yes	-	-

MFIXTYPE and MFIXLINE are fixed spacing fonts for tabulations using Headline.

Headline Mode

The characters of a 9 pin printer are made up from dots which are noticeably bigger than with 24 pin printers. Add to this the complication that proportional NLQ fonts cannot be downloaded to 9 pin printers and you will understand why driving these printers requires a more sophisticated programme.

The BrunWord Elite ROM contains a separate programme called 'Headline' which intercepts the output when intended for a 9 pin printer. Headline converts this output into a 'bit image' pattern and sends this to the printer. This means that any printer that can print 'quadruple bit image graphics' can be used in this way.

Most modern 9 pin printer and all 24 pin printer have these facilities and can be used with Headline. Headline has a considerable amount of computing to do and an incredibly large amount of data to send to the printer. This means that Headline prints 2 or 3 times slower than normal printing.

24 Pin Download

Most 24 pin printers can accept downloaded proportional LQ fonts, and all BrunWord Elite fonts that are 24 pins high or smaller can be used in this way with these printers. Once the font is downloaded the printer will print at its normal speed.

3. Using 9 Pin Printers

If you have a 9 pin printer (or you are using an ink jet or laser jet in Epson FX . . . mode) then there are three ways that BrunWord can drive the printer.

Whole Space Justification

This is the easiest way to drive any printer, as the only requirement is that it must be set to an Epson mode. This method can only be used with the printer's own internal fixed pitch fonts. The BrunWord Elite ROM fonts will not justify correctly with whole space justification as they are proportional fonts.

If you are a complete beginner, the best approach is to work through the example starting on page 21 of the main manual. Later when you are more confident, tackle the systems that are described below.

Headline

To operate a printer in BrunWord's Headline mode it must have 'quadruple bit image' facilities. You can check this by referring to your printer's manual to confirm that it describes the Epson ESC Z command as 'Quadruple Bit Image', 'Quadruple Graphics' or something similar sounding. All modern 9 pin printers have this feature.

When a 9 pin printer prints using its own NLQ font, it prints each line of text twice with a very slight movement of the paper in between. This means that the line of text is actually made up of 18 vertical dots.

When Headline is used, each line of text is made up of either 2 or 4 sweeps of the print head, which allows Headline fonts to have up to 32 vertical dots. This accounts for the very high quality of the printing when using Headline.

System 2 Headline

All BrunWord ROM fonts are proportional fonts. The space is smaller than the average character size and an 'm' is much wider than an 'i'. If these fonts were printed using whole space justification then the ends of the printed lines would not be even, centred text would be printed off-centre and text against the right margin would be printed an inch or two away.

System 2 is a simplified way of using Headline fonts but it is a little less flexible than driving Headline directly. One of the great advantages of System 2 is that automatic formatting is possible. In this mode System 2 works out from the screen layout whether you wish the text to be normal text, centred or on the right, rather than needing a layout instruction to give this information. System 2 is the easiest way to use Headline and is the best way for all normal printing. The parameters for System 2 are described further on but that should be left until you are familiar with this section.

Simple Examples

The first step is to GET LETPAT.91 from the ROM and print it. To do this, enter BrunWord in the usual way with |BW [ENTER]. Press ESC to ensure the main menu is displayed. Press G for GET, and the list of files contained in the ROM will be displayed. Type LETPAT.91 then press ENTER. The file will be taken from the ROM, placed temporarily in the screen memory (you will see lines on the screen) and then moved into BrunWord's work area.

LETPAT.91 shows how to use System 2 to produce a simple letter with the minimum of layout codes. Set up your printer with paper and switch it on. Press ESC to enter BrunWord's ESCAPE mode, type P P N 1 and press ENTER.

This example uses our FINETYPE font which is 24 dots high. This is quite large compared to the printer's normal printing but it is ideal for fairly short letters. The layout instruction in the first line sets the line spacing or GAP to 20. Normally for a 9 pin printer the GAP would need to be 36 but as this font is larger than 16 and smaller than 32 dots high, we need to make an adjustment.

All layout instructions are based on INCODEs. Hold SHIFT and press the dot key in the numbers keypad to produce the INCODE character. This is always followed with a capital letter and then usually a number, with no spaces. INCODEs are fully explained in the main manual and these are best learnt as you need to know. In this manual we use > to represent the INCODE character.

The Ending Code

Move the cursor to the end of the LETPAT.91 file and you will see a final sequence of codes. The one on the left turns Headline OFF. The next sets the GAP to ensure that its value is known, and the last uses the RESET INCODE to move the paper to the end of the form. These values are correct for 11 inch fan fold paper. For 12 inch paper you will need to change 2340 to $12 \times 216 - 36 = 2556$. A4 paper requires $11.6667 \times 216 - 36 = 2484$.

Changing The Font

LETPAT.92 shows how to change the font within the body of the text. GET this from the ROM and print it out. Notice that the font is changed to the fixed spacing font MFIXTYPE just before the list of items. This ensures that the columns are in exact alignment. If the font size is 16 or 32 dots high then the line GAP needs to be the standard value of 36. In between font sizes need a smaller GAP. Generally 24 dot fonts need a GAP of 20, while 21 dot fonts need 17.

Company Heading

Next GET LETPAT.94 from the ROM and print it out. The proprietors name at the end is positioned to be printed at the very bottom of 11 inch paper, starting with the top of the paper lined up with the top of the print head. INCODE R 2260 immediately before the name sets the position and this can be changed to make adjustments as necessary. For example 12 inch paper is one inch longer so the reset number needed is $2260 + 216 \times 1 = 2476$.

Using Script Fonts

The Mark 4 ROM has a number of script fonts where the letters link across to each other. This means that each character extends right up to the edge of its area. When Headline justifies it will squash or stretch a line to make it exactly the right length to fit between the margins. Obviously, this will not enhance the appearance of script fonts as some characters will be slightly shaved.

LETPAT.93 demonstrates the best ways of using script fonts. GET this from the ROM and print it out. (Previous users of earlier BrunWord Elite ROMs take note that with the Mark 4 ROM the Width Factor and the Print Factor are the normal values of 37 and 28).

POSTER-D is used for your address to give the impression of using printed stationary. MHSCRIPT is set just before the date. Notice that this INCODE sequence ends with a fixed space. Simply press F4 on its own to produce this. If it is left off then BrunWord will miss the line end marker.

The INCODE sequence before the body text turns automatic justification off, using >D*J4* which allows the programme to change the number of words in each line. For simplicity, automatic formatting is turned on again after the body text using >D*J15*.

The mid size script font MHSCRIPT is optimised for 9 pin printers with generous ascenders and descenders. If you prefer the whole letter in MHSCRIPT then this can be removed from the text and the font number in the System 2 codes changed to 147.

There are 5 ASCII characters that cannot be printed using the BrunWord script fonts as these have been given a special use in helping the fonts to flow correctly. These are the two curly brackets, the back slash, the underline character and the reverse single quote mark { } / _ `

Font Demo

There are three files in the ROM which between them print every character of the 23 proportional fonts. FONTDEMO.91 prints the Fineline and Fineform style of fonts. FONTDEMO.92 prints all the scripts fonts. FONTDEMO.93 prints the Finetype, Chelmer and Poster fonts.

GET each one in turn from the ROM using ESC G and print it using ESC P P N 1 followed with ENTER. They are intended to be used as reference sheets to help you choose your fonts.

Most BrunWord fonts have the back slash as a standard spaced 1, the single reverse quote as a standard spaced decimal point and ~ as a standard spaced space. These are useful to simplify numerical tabulations. The 32 dot fonts do not have sufficient room for these, and also have some lesser characters missing.

Experimenting

When you have printed all the letter pattern and font demo files, load LETPAT.91 again and change System 2 parameters so that CHELMERD (download size of CHELMER) is used. To do this we need to change the codes to 2,15,138,37,28,0,0,0,0.

Press ESC then P so that the PRINT menu is displayed. Look at the 'Pre-Print' codes. The first one is 2 which shows that this is a System 2 file. Press Z and BrunWord is ready to accept the first code. Each number must be typed separately followed by ENTER, but where the number is zero you can just press ENTER.

So! type 2 and press ENTER. Type 15 and press ENTER. Type 138 and press ENTER. Type 37 and press ENTER. Type 28 and press ENTER. Press ENTER four times for the last four zeros. When the last number is entered the new numbers will be displayed in the print menu. 138 will be shown as =8.

Now print the file with ESC P P N 1.

When this has printed, change the font to POSTER-D and print the file again. POSTER-D is numbered 149 for Headline mode so the numbers becomes 2,15,149,37,28,0,0,0,0. Each System 2 number must be entered separately as described above. 149 will be displayed as >9.

LETPAT.91 is optimised for 24 dot fonts while some of the other letter patterns are best with other font sizes. Experiment with the other patterns in the same way, but remember that the font number in the System 2 codes only sets the starting font. If you wish to change the second or third font then the font name in the text will need to be retyped.

The Demo File

DEMO.91 is an example of using Headline fonts to print a poster. GET this from the ROM and print it out.

Ordinary Headline

Headline can also be used without System 2. This is fully explained in the main manual from page 67 onwards. The operation of the Mark 4 ROM is identical except that there are 25 fonts to choose from instead of 10. The Mark 4 ROM has improved facilities for using Headline with System 2 and so the System 2 Headline described above is the best approach for beginners.

A number of example files are provided on disc that demonstrate Headline used in this way. These are all called HEADEX.???. HEADEX.96 is particularly interesting as it shows how to produce a three column A4 page, so be sure to LOAD and print this file. ***If you load HEADEX.96 from a Mark 2 or 3 examples disc, you must FIND the first eight J3 and REPLACE with J7 before you print the file.***

4. Using 24 Pin Printers

There are four ways that BrunWord can be used to drive a 24 pin printer (or an ink jet or laser jet set to Epson LQ... mode).

1. Whole Space Justification.
2. Printer Justification.
3. System 2.
4. Headline.

The BrunWord Elite fonts can be used with 2, 3 and 4, but with 2 and 3 the printer must have enough memory to accept a downloaded fonts. All the latest 24 pin printers have this capability and most of the old designs. The original 24 pin Star and Panasonic printers are notable exceptions, but extra memory can be purchased.

4.1. Whole Space Justification

This is the easiest way to drive any printer, as the only requirement is that it must be set to an Epson mode. This method can only be used with the printer's own internal fixed pitch fonts. The BrunWord Elite ROM fonts will not justify correctly with whole space justification as they are proportional fonts.

If you are a complete beginner, the best approach is to work through the example starting on page 21 of the main manual. Later when you are more confident, tackle the systems that are described below.

4.2. Printer Justification

Originally all 24 pin printers were able to micro justify a line of text, without any help from the driving programme. Later due to the increased complexity of these printers, this internal justification system was abandoned.

The original BrunWord Elite system relies on the printer's internal justification system, and is described from page 51 onwards in the main manual. Some later 24 pin Epson printers, such as the LQ570, will not produce justified text when used in this way, and for these printers System 2 must be used.

Previous BrunWord Elite users will find that existing files will print correctly using the Mark 4 ROM, but will often find it easier to create new documents using System 2. Newcomers to BrunWord Elite should use System 2.

4.3. System 2

System 2 uses its own process to justify text. It adds the widths of all the characters in a line, and then calculates how much space to distribute between each letter. This means that it will work with all 24 pin printers and any font of known size, whether it is a proportional or a fixed pitch font.

One of the great advantages of System 2 is that automatic formatting is possible. In this mode System 2 works out from the screen layout whether you wish the text to be normal text, centred or on the right, rather than needing a layout instruction to give this information.

The parameters for System 2 are fully described further on but that should be left until you have worked through this section.

Simple Example

The first step is to GET LETPAT.241 from the ROM and print it. To do this, enter BrunWord in the usual way with |BW [ENTER]. Press ESC to ensure the main menu is displayed. Press G for GET, and the list of files contained in the ROM will be displayed. Type LETPAT.241 then press ENTER. The file will be taken from the ROM, placed temporarily in the screen memory (you will see lines on the screen) and then moved into BrunWord's work area.

LETPAT.241 shows how to use System 2 to produce a simple letter with the minimum of layout codes. This example uses emphasised CHELMERD for your address and FINETYPE for the rest of the letter. Set up your printer with paper and switch it on. Press ESC to enter BrunWord's ESCAPE mode, type P P N 1 and press ENTER.

Notice the absolute TAB (SHIFT f0) at the start of each line requiring to be tabulated. The back slash is an equal spaced 1 and the character just before the number 2 is an equal spaced space. Delete one or two of the absolute TABs and print the file again to see the difference.

All layout instructions are based on INCODEs. Hold SHIFT and press the dot key in the numbers keypad to produce the INCODE character. This is always followed with a capital letter and then usually a number, with no spaces. INCODEs are fully explained in the main manual and these are best learnt as you need to know. In this manual we use > to represent the INCODE character.

Company Heading

LETPAT.242 is a simple example of how to layout a company heading using system 2 and downloaded fonts. GET this from the ROM and print it out. The whole letter uses FINETYPE, the heading being double height and double width.

Next GET LETPAT.243 from the ROM and print it out. This is very similar to LETPAT.242 but uses POSTER-D for the heading and FINETYPE for the body text.

Using Script Fonts

The Mark 4 ROM has a number of script fonts where the letters link across to each other. This means that each character extends right up to the edge of its area. When BrunWord justifies it will open up the space between letters to stretch the line to make it fit exactly between the margins. Obviously, this will not enhance the appearance of script fonts.

LETPAT.244 demonstrates the best ways of using script fonts. GET this from the ROM and print it out. Emphasised CHELMERD is used for your address to give the impression of using printed stationary. Old Hand Script is set just before the date. Notice that this INCODE sequence ends with a fixed space. Simply press F4 on its own to produce this. If it is left off then BrunWord will miss the end of line marker.

The >J4 before the body text turns automatic justification off, but allows the programme to change the number of words in each line. For simplicity, automatic formatting is turned on again after the body text using >J15.

There are 5 ASCII characters that cannot be printed using the BrunWord script fonts as these have been given a special use in helping the fonts to flow correctly. These are the two curly brackets, the back slash, the underline character and the reverse single quote mark { } / _ `

Font Demo

There are four files in the ROM which between them print every character of the 23 proportional fonts. FONTDEMO.241 prints the Fineline and Fineform style of fonts. FONTDEMO.242 prints the scripts fonts. FONTDEMO.243 prints the Finetype, Chelmer and Poster fonts. FONTDEMO.244 prints all the 32 pin fonts using Headline.

GET each one in turn from the ROM using ESC G and print it using ESC P P N 1 followed with ENTER. They are intended to be used as reference sheets to help you choose your fonts.

Most BrunWord fonts have the back slash as a standard spaced 1, the single reverse quote as a standard spaced decimal point and CTRL f0 as a standard spaced space. These are useful to simplify numerical tabulations. The 32 dot fonts do not have sufficient room for these, and also have some lesser characters missing.

Experimenting

When you have printed all the letter patterns and font demo files, load LETPAT.241 again and change System 2 parameters so that POSTER-D is used for your address. To do this we need to change the codes to 2,15,19,32,0,6,0,0,0.

Press ESC then P so that the PRINT menu is displayed. Look at the 'Pre-Print' codes. The first one is 2 which shows that this is a System 2 file. Press Z and BrunWord is ready to accept the first code. Each number must be typed separately followed by ENTER, but where the number is zero you can just press ENTER.

So! type 2 and press ENTER. Type 15 and press ENTER. Type 19 and press ENTER. Type 32 and press ENTER. Type 0 and press ENTER. Type 6 and press ENTER. Press ENTER three times for the last three zeros. When the last number is entered the new numbers will be displayed in the print menu.

Now change the download instruction in the text so that CHELMERD is used for the body text. To do this move the cursor onto F of FINETYPE in the 6th line, and press CLR 8 times. Press CAPS LOCK then type CHELMERD. Press CAPS LOCK again.

Print the file with ESC P P N 1.

4.4. Headline

To operate a printer in BrunWord's Headline mode it must have 'quadruple bit image' facilities. All 24 pin printers include this feature but you can double check by referring to your printer's manual to confirm that it describes the Epson ESC Z command as 'Quadruple Bit Image', 'Quadruple Graphics' or something similar sounding.

The operation of using Headline with a 24 pin printer is identical to using it with a 9 pin printer. However the printed page is slightly different as the printing is a little taller. This is not the best way to use BrunWord but Headline can be useful to produce extra large printing for posters. GET DEMO.91 from the ROM and print it out.

If you wish you can also GET and print the 9 pin letter patterns as explained on page 8. These will be somewhat longer than a normal page.

When Headline is used, each line of text is made up of either 2 or 4 sweeps of the print head.

5. System 2

Most modern 9 pin printers and all 24 pin printers have the ability to produce micro spaced printing. Check your printer manual to ensure that ESC (space) = 'intercharacter space' and ESC \$ n1 n2 = 'absolute position'. System 2 uses the 'Pre Print' codes in the printer menu to show that System 2 is being used and to define the starting conditions for printing the file.

No	Function	Value	Description
1	Indicator	2	2 = System 2, other value = normal.
2	Justification (initial value)	0 or 4 1 or 5 2 or 6 3 or 7 11 15	Justification OFF. Print in centre. Print against right margin. Justification ON. Auto fixed justification. Auto flexible justification.
3	Font Selection (24 Pin)	0 to 19 40 to 49 50 to 59 60 to 69 70 to 79 80 to 89 90 91 92 93 94 95	BrunWord ROM internal font (24 pin). Epson proportional fonts (24 pin). Other proportional fonts (24 pin). Fixed 10 pitch fonts (24 pin). Fixed 12 pitch fonts (24 pin). Fixed 15 pitch fonts (24 pin). Fixed preset 10 pitch font (24 pin). Fixed preset 12 pitch font (24 pin). Fixed preset 15 pitch font (24 pin). Draft 10 pitch font (24 pin). Draft 12 pitch font (24 pin). Draft 15 pitch font (24 pin).
	(9 pin)	96 97 98 99 100 to 109	Fixed preset NLQ 10 pitch (9 pin). Fixed preset NLQ 12 pitch (9 pin). Star LC10 Courier NLQ proportional. Star LC10 Sanserif NLQ proportional. Other 9 pin proportional fonts.
	(9 & 24 pin)	130 to 155	BrunWord Elite 'Headline' fonts.
4	Ref Width	10 to 255	Character ref width = (inches/360) + 1
5	Right Trim	0 to 255	Right Margin Trim = (inches*360)
6	Printer Offset	0 to 255	Printer left margin offset.
7	Printer Column	0 to 128	Printer column = R marg - L marg.
8	L Header Marg	0 to 255	Header & Footer left margin.
9	R Header Marg	0 to 255	Header & Footer right margin.

Two numbers are displayed in each Pre Print code. When the left number goes above 9 it becomes the next ASCII character. (:3 = 103, ;2 = 112 etc).

5.1. Indicator

The first 'Pre Print' number is used as the indicator. If its value is 2 then the programme will use the System 2 printer control, any other value will mean that the 'Pre Print' codes are for normal use. If you want to set extra starting conditions while using System 2, then use the Direct Printer INCODE (main manual page 56) in the first line of the file.

5.2. Justification

The second number sets the initial state of the justification INCODE, as explained on page 61 of the main manual, but System 2 will work with more printers including many 9 pin printers.

Two extra justification features have been added to System 2, which enable the programme to follow the layout on the screen, even when using proportional printing. If the justification is set to 11 or 15 then the programme will assume that the screen shows generally what is wanted on the printed page. If a piece of text is roughly in the centre of the screen then the programme will centre it exactly. Similarly if it is roughly against the right margin then the programme will position it to line up exactly with the right margin.

The auto-justification even follows the screen layout when the printer margins are significantly different from the screen. You could, for example, have the screen margins at 1 and 80 and the printer margins at 0 and 128. If you then set justification 15, the programme will be allowed to fill the printer lines correctly, ignoring the line ends as shown on the screen BUT it will continue to lay out the page as it appears on the screen.

With justification values of 0, 1, 2, 3 and 11 the programme will follow the justification requirement, taking the line lengths as shown on the screen. For non-proportional printing with the printer margins the same as the screen, this is perfectly correct. If proportional text is used then lines with many narrow letters such as i or l may appear stretched while lines with many mmmm's could overspill.

Justification values 4, 5, 6, 7 and 15 allow the programme to ignore the line ends shown on the screen. In this case a line with many narrow letters would have more words than one with many wide letters and so a pleasant balance is achieved. If the printer margins are set differently to the screen then one of these values MUST be used or the result will be very silly!

5.3. Font Selection

The third 'Pre Print' number controls the font selection.

BrunWord ROMs that are supplied without a Printer Status Port will not operate correctly using System 2 until a Printer Status Port is purchased and fitted. ROMs that are supplied with a Printer Status Port MUST have the port fitted at all times.

5.3.1. Fonts - 24 Pin Printers

- 0 to 19 One of the BrunWord Elite fonts contained in the ROM will be downloaded to the 24 pin printer. The number is the one given in the Headline menu. Press ESC H to see the selection. Numbers 8 and 9 must not be used as these fonts are too big to be downloaded and can only be used as 'Headline' fonts. The printer must be set to receive a downloaded font and some printers such as the Star and Panasonic 24 pin printers will need additional memory before this is possible.
- (20 to 39) Some printers such as the Star 24 pin always use a full size space. Add 20 to the font number to use these printers.
- 10 to 19 If you have the BrunWord ELite Font Editor then numbers 10 to 19 allow a disc font to be used. The font name must be DFONT10 with font number 10, DFONT11 with 11,DFONT19 with 19.
- 40 to 49 Epson have specified a set of standard widths for their proportional fonts and we have programmed this table into the BrunWord ROM. Look in your Epson (24 pin) printer manual under the ESC k 'font selection' command and choose the required font. Add 40 to the font number given in the printer book and that is the number to use. e.g. LQ570 40=Roman.
- 50 to 59 Many other makes also use the Epson widths and numbers 40-49 can be used as above. Numbers 50 to 59 work in exactly the same way but a table of widths is loaded from disc. In this case add 50 to the font number given in your printer manual. The width table must be already saved to your disc and named TABLE50 TABLE51... TABLE59 and must be exactly 96 bytes long. More details are given later.
- 60 to 69 These specify a non-proportional (fixed) 10 pitch font. Find the ESC k number, in your printer manual, that defines the font that you wish to use and add it to 60.
- 70 to 79 Same as 60-69 but using a 12 pitch font. Add font number to 70.
- 80 to 89 Same as 60-69 but using a 15 pitch font. Add font number to 80.
- 90 Selects non-proportional (fixed) 10 pitch but does not change the font selection of the printer.
- 91 Selects non-proportional 12 pitch but does not change the font selection of the printer.
- 92 Selects non-proportional 15 pitch but does not change the font selection of the printer.
- 93 Selects non-proportional draft 10 pitch.
- 94 Selects non-proportional draft 12 pitch.
- 95 Selects non-proportional draft 15 pitch.

5.3.2. Fonts - 9 Pin Printers

- 96 Selects non-proportional NLQ 10 pitch but does not change the font selection of the printer.
 - 97 Selects non-proportional NLQ 12 pitch but does not change the font selection of the printer.
 - 98 Selects Courier NLQ proportional for the Star LC10, using a width table that is programmed into the BrunWord ROM.
 - 99 Selects Sanserif NLQ Proportional for the Star LC10, using a width table that is programmed into the BrunWord ROM.
- 100 to 109 Selects NLQ proportional 12 pitch and loads a width table from disc. Look under ESC k in your printer manual and select a NLQ font. Add the number given in the printer manual to 100 and that is the System 2 font number. With font number 100 the programme will search the current disc for a file called TABLE100. The disc file must be exactly 96 bytes long. If the file doesn't exist or is not exactly 96 bytes long, then it will be 'Not Found'. 101 uses TABLE101.... 109 uses TABLE109. (Note that 100 is displayed as :0, 101 as :1 and so on.)

5.3.3. 'Headline' Fonts

- 130 to 155 Selects a 'Headline' font and switches Headline ON. Use ESC H to see the Headline menu and choose a font number. Add this to 130 and that is the number to use. If you wish to use a disc font then that must be specified within the text in the normal way.

5.4. Reference Width

When using non-proportional (fixed) fonts, the screen and the printer will always have the same number of characters per line (assuming that the margins are the same). In this case always leave the fourth number in the Pre Print codes as zero. The programme will then select the correct value.

For proportional printing, the system has been set up for the best results in an average case. This means that, when the programme is allowed to fill the line correctly, the printed line will often contain 10% or even 20% more characters than the screen. This is normally perfectly acceptable but the reference width can be set to trim this to a closer fit. Usually this would be in the range of 20 to 40. (Automatic right positioning will fail if the reference width is less than the width of the space).

Another possible reason to set the Reference Width is if exact margin positions are required. 37 gives exact 0.1 inch steps to margins (37-1)/360 inches. In all cases, if in doubt leave it as zero, and the programme will set it to the width of the letter a or space, which ever is larger.

5.5. Right Trim

The Size Factor (main manual page 63) is used in a totally different way in System 2. It is used to finely trim the exact position of the right margin. The margin will increase by (Right Trim)/360 inches. Normally the Right Trim value will be zero. (If a Headline font is specified then this parameter is the Size Factor, and its value should normally be set to 28).

5.6. Printer Margin Offset

Normally the screen margins and the printer margins will want to be the same and in this case set this value to zero. If you wish to specify a printer offset then a value can be entered. Usually this will not be above 80 but a value of up to 255 can be entered (when the left number goes above 9 it shows as the next ASCII value as only two digits can be displayed e.g. 109 displays as :9).

5.7. Printer Column Width

Normally the screen margins and the printer margins will want to be the same and in this case set this value to zero. If you wish the printer to print wider or narrower than the screen then a value can be entered. This must be 20 or above and should not be more than 120 to 136 depending on other parameters.

BrunWord has a printer buffer with 136 bytes which is the maximum number of characters that can be sent in any one line. For proportional printing the column width should be somewhat less than 136 to allow extra characters in some lines. The Reference Width will also affect the number of characters in a printed line.

5.8. Left Header/Footer Margin

Most layouts require the screen margins and header/footer margins to be the same. In this case leave this eighth pre print as zero.

If different header/footer margins are needed, the value for the left header/footer is the actual value not an offset. It will be necessary to add the screen left margin (less one) to the printer offset required to get the value of the header/footer left margin. This is necessary to account for complex layouts where the printer offset may be changed within the body of the text.

5.9. Right Header/Footer Margin

Most layouts require the screen margins and header/footer margins to be the same. In this case leave this ninth pre print code as zero.

Similarly to the left header/footer margin, this specifies the actual right margin position, not the column width. It will be necessary to add the screen left margin (less one), the printer offset and the printer column width to get the value for the right header/footer margin.

6. System 2 Headline

If the System 2 font is between 130 and 152 then Headline will be turned ON and all printing will use the printer in the 9 pin bit image mode. The operation is very similar to the normal Headline operation as described from page 67 in the main manual. All normal printer codes are ignored when Headline is ON.

6.1. Limitations

If a whole paragraph needs to be indented, then the Margin INCODE must be used to set new margins. Temporary left margin must not be used as the requirement is too complex for Headline and various strange effects can result.

Also, the Absolute TAB cannot be used with Headline. The easiest way to tabulate items into columns is to change to one of the two fixed spacing fonts. This is demonstrated in LETPAT.92.

Finally, Headline does not compensate the automatic headers and footers for proportional letters so these will not correspond to the expected margins. The best way to print a Footer is to define a line of text to be printed in an exact position using the Reset INCODE.

6.2. H-INCODE Patterns

The following is a list of typical H-INCODEs. The easiest way to understand the operation is to print and study the example files stored in the ROM. The > character is used below in place of the INCODE character. (Hold SHIFT and press the dot key in the numbers key pad to produce the proper INCODE character).

- | | |
|---------------|--|
| >D* MFIXTYPE | Switches Headline ON (if necessary) and selects the fixed spacing font MFIXTYPE. |
| >D*J3 MIDTYPE | Switches Headline ON, sets justification ON and selects MIDTYPE. |
| >D*J7 MIDTYPE | Switches Headline ON, sets justification ON, allows the programme to adjust the line lengths for best appearance (J3 + 4), and selects MIDTYPE |
| >D*J0* | Sets justification OFF. |
| >D*J4* | Sets justification OFF and allows the programme to adjust the line lengths for optimum appearance (J0 + 4). |
| >D*32J15R* | Switches Headline On, sets triple width, double height, automatic justification and reverse without stopping. |
| >D*0 | Switches Headline OFF. (Use number 0, NOT letter O). |

6.3. Print Size

Headline has very flexible print sizes. The width can be set from single to nine times width in steps of one. The height can be set to single, double or eight times. All these can be used in any combination but there are obvious choices for best appearance.

In the H-INCODE sequence, the first lone number is always the width multiplier and the second lone number the height multiplier. If the width of the printed line is too wide for the current printer margins, the programme will reduce the width multiplier until the line fits or the width equals one. (This is a permanent change until it is reset with a further H-INCODE).

6.4. Reverse or Stop

Many 9 pin printers do not have the ability to reverse the paper, but some complex layouts are not possible if the paper is not reversed. The programme can be set to stop at the critical points and to request the paper to be set to a reference point. Place R in the H-INCODE to reverse without stopping or S if your printer does not reverse.

6.5. Justification

The Mark 4 ROM has improved Headline justification. With the earlier ROMs it was possible for the last line of a paragraph to overshoot the right hand margin. This happened because Headline justifies by expanding or contracting a line, and the last line of a paragraph is always left unjustified.

Headline now detects when the last unjustified line is going to overshoot and contracts the line. If every last line of a paragraph is contracted (the easy solution) then the text looks slightly unbalanced.

With the Mark 4 ROM, it is also possible to use the higher justification numbers in the actual H-INCODE sequence (J4, J7 and J15). Previously it was necessary use both standard INCODEs and H-INCODEs together to achieve this.

- >J0 Justification OFF (print against LHS).
- >J1 Centre the text.
- >J2 Print against right margin. (Ragged left).
- >J3 Full justification ON.

- >J4 Same as >J0 but line filled according to character size.
- >J5 Same as >J1 but line filled according to character size.
- >J6 Same as >J2 but line filled according to character size.
- >J7 Same as >J3 but line filled according to character size.

- >J11 Automatic fixed formatting.
- >J15 Automatic flexible formatting.

(>J19 and >J32 are not available for Headline).

6.6. Multi-Strike

Nine pin printers often produce a line that is too faint. The multi-strike facility of Headline allows each stage to be repeated up to nine times, without the print head being moved up or down. This enables quite an old ribbon to produce dense sharp characters. Usually double or triple strike is sufficient.

This parameter is specified in the H-INCODE using M followed by a single digit number.

6.7. Print Box or Line

When Headline is turned ON it redirects the 24 pin box INCODE to a special 9 pin version. This operates in the same way except that the depth of the box is in units of inches times 216. For printers without reverse it will be necessary to set Headline to 'Stop'. This INCODE is used in its standard form.

>B [thickness] [depth] [type] [1st position] [2nd position] etc

Thickness 1 pin thick = 16, 2 = 24, 3 = 28, 4 = 30, 5 = 31,
6 pins = 63, 7 pins = 127, 8 pins = 255.

Depth Inches multiplied by 216.

Type 2 = box. 0 = hor line. 1, 3, 4 etc = vert line(s).

1st position Inches multiplied by 60 from left margin.

2nd position Inches multiplied by 60 from left margin.

>B16 432 2 60 180 Box, thin line, 2 in square, 1 inch from margin.

>B28 0 0 60 180 Hor line, 3 pins thick, 2" long 1" from margin.

>B24 432 1 60 Vert line, 2 pins thick, 2" deep, 1" from margin.

>B16 432 3 30 60 90 Vert lines, thin, 2" deep, .5" 1" & 1.5" from margin.

7. System 2 Example

Reset the printer by switching it OFF after each example.

The BrunWord System 2 can be used with any Epson compatible printer that has commands to set the intercharacter space, and to set an absolute horizontal position. Check your printer manual and if ESC (space) = 'intercharacter space' and ESC \$ n1 n2 = 'absolute position' are included then it is almost certain that your printer is suitable. The Amstrad DMP2160 etc are not modern printers and do not have the necessary features for the full use of our System 2. You can use the System 2 simplified control of Headline with any Epson compatible printer, including Amstrad DMP2160 etc. More modern 9 pin printers (e.g. Star LC10), and all 24 pin printers, are able to use all the features of our System 2.

Type in the simple letter on page 21 of the main manual, so that it appears on the screen just as it does in the manual. To achieve this you will need to justify the text using BrunWord's whole space justification CTRL W.

To save on paper for this example, set the print menu to print half pages as follows. ESC P to display the print menu. Set the number of lines to 27 with P 27 [ENTER]. Set the form length to 31 (11 inch paper) with F 31 [ENTER]. (Any other length, multiply inches by six then subtract 2 for the footer).

Return to the text by pressing ENTER then CTRL [Right Arrow] to go to the end of the file. Check that the diamond end of text marker is still on the first page. If necessary clear any bank lines at the end and move the text up as necessary to bring the end of text marker onto the first page.

Move the cursor down to the second line of the address and press the CLR key three times so that the 1 of 138 is just before the B of Brunning. Move down to the 'Yours sincerely' line and again press CLR 3 times so that yours sincerely is no longer exactly in the centre.

Switch your printer ON and set it to NLQ with its main font. Print the letter using ESC P P N 1. This is ordinary printing using whole space justification. The page just printed is your reference page. Switch the printer OFF and ON.

To use System 2 micro justification we must first remove the whole space justification. If we do not then the paragraphs would print out looking exactly the same. In the BrunWord editor, with the letter on the screen, press CTRL Q and the programme will take out all the extra spaces from within the paragraphs.

Display the print menu with ESC P. Press Z. 'Print Code Z No 1' will be displayed press 2 [ENTER]. No 1 is the indicator and is always 2 for system 2.

'Print Code Z No 2' will be displayed. No 2 is justification. Type 11 [ENTER].

'Print Code Z No 3' will be displayed. No 3 is font reference number. For a 24 pin printer then type 90 [ENTER]. For a 9 pin printer then type 96 [ENTER].

Press ENTER another six times to set all the following Z codes to zero.

Press ESC P P N 1 to print the file again.

This time you will see that all the address lines are hard against the right margin, the paragraphs are micro spaced and 'Yours sincerely' is exactly in the centre.

If we wanted some of the address lines away from the right margin then we would need to place fixed spaces (using the [f4] key) at the end of the lines requiring to be set back.

As this printing is using non-proportional printing, we could use justification number 3 and then we would have micro justified paragraphs but without automatic formatting. (Try this if you wish).

Mixed Size Print

With our test letter displayed, move the cursor to the top line and hold CTRL and press C to centre 'Brunning Software'. Move the cursor onto the B of Brunning and press SHIFT [f1] then SHIFT [f9] for double width double height. Move onto the e of software and press CTRL [f9] then CTRL [f1] to turn them off.

(Some printers, particularly Citizen, use different codes for double height which would need to be programmed into SHIFT and CTRL [f9]. If CTRL 1 and CTRL 2 are used with the HQP40/45 then SHIFT and CTRL [f1] must also be used as these trigger System 2).

Print the letter again with ESC P P N 1 to see the result.

Strictly we would say that different widths of text on one line or within a paragraph cannot be handled by System 2. In practice it can mix double and normal width so long as the change does not span across the end of the printed line. Success will vary from one type of printer to another. It is far more usual to highlight using italics and or emphasised printing but many 9 pin printers do not have these facilities in NLQ (Star LC10 does not). All 24 pin printers do provide italics and emphasised printing in LQ.

Try double width on the single word 'demonstration' in the first paragraph. Insert SHIFT [f1] before and CTRL [f1] after, and print the file again. The justification should still be correct but success will depend upon your particular printer.

Wide Printing.

Set the Pre Print codes to 2, 15, 91 or 97, 0, 0, 0, 90, 0, 0 as above, but remember to press ENTER after each number rather than typing a comma. Justification number 15 allows the programme to ignore the line ends shown on the screen and asks for automatic formatting. Font numbers 91 (24 pin printers) or 97 (9 pin printers) set 12 pitch non-proportional printing. The printer column width is set to 90. Press ESC P P N 1 to print the letter. You will get a very wide letter with the same general appearance as on the screen.

This example can only give you a flavour of System 2. From here on there are too many combinations for different printers and requirements. Study the list of font reference numbers, then read this manual right through again.....

8. Table of Widths

The BrunWord System 2 printer control will only work correctly if it has an accurate character width table. It uses this to calculate the total amount of space within a line and then distributes the space to achieve the required layout effect.

Non-proportional fonts use a fixed width and so there are very simple rules that the programme can use to set up the width table. With proportional fonts, the size of each character is adjusted to give the right appearance so that iiiii's take up much less width than mmmmm's. Different printer manufacturers have different ideas on font design and there is no simple standard to use for proportional fonts.

Creating a width table for a particular font is straightforward but quite a lengthy process. It must be done carefully and accurately. Firstly, you must measure the width of each character then the 96 values must be gathered into a table and saved to your disc. The measurement process of both 9 pin and 24 pin fonts is the same but the actual table is created with different routines.

8.1. Measuring the Font

To do this, you need a printout of rows of each character. The easiest way is to create a file in BrunWord and then to print the file. Enter BrunWord in the usual way with |BW, set the left margin to 1 and the right margin to 80. Open your Amstrad CPC Computer manual so that you can follow the sequence of ASCII characters. (CPC6128 chapter 7 page 9, CPC464 Appendix III page 2, 6128/464 Plus chapter 6 page 9).

Start with ASCII character 32 (space). Press <ENTER> twice to leave room for a heading. Then press the space bar 72 times then E to mark the end. Press <ENTER> to move to the next line and press ! 72 times then E to mark the end. Do this for all characters from ASCII 32 to 125 (that's 94 characters). Mark the end of the E's with F and be very careful to keep the rows in the correct order. Characters 126 and 127 will be given dummy values in the table as they only have significance with BrunWord Elite internal fonts. Save the file to your disc using the name FONTLIST.

Set your printer to the required proportional font using the 12 pitch size, which is often called 'Elite' size. (It is very important to use 12 pitch size). Type a heading in the first line of FONTLIST, which should include your printer type and the font name that you have set on the printer. Print the file in the usual way.

Measure the length of each string of characters from the beginning of the line to the very start of the E that marks the end, using inches and tenths. DO NOT INCLUDE THE WIDTH OF THE E IN THE Measurement it is purely a common end marker.

By using 72 characters in each line, we ensure that the string of characters will be an exact number of tenths of an inch long. So make your measurement to the nearest tenth of an inch and write the number without the decimal. For example a measurement of 7.02 inches is rounded and written as 70.

8.2. Table for 9 Pin Printers

Clear the BrunWord work area and type in the following BASIC programme.

```
10 DATA 01,02,03,04,05,06,07,08 :REM Type your measured widths here
20 DATA 01,02,03,04,05,06,07,08
30 DATA 01,02,03,04,05,06,07,08
40 DATA 01,02,03,04,05,06,07,08
50 DATA 01,02,03,04,05,06,07,08
60 DATA 01,02,03,04,05,06,07,08
70 DATA 01,02,03,04,05,06,07,08
80 DATA 01,02,03,04,05,06,07,08
90 DATA 01,02,03,04,05,06,07,08
100 DATA 01,02,03,04,05,06,07,08
110 DATA 01,02,03,04,05,06,07,08
120 DATA 01,02,03,04,05,06,07,08
200 MEMORY &3FFF
210 M=&4000:N$="TABLE100":REM Number = ESC k number + 100
220 FOR A=1 TO 96
230 READ K
240 K=K+1
250 POKE (M),K
260 M=M+1
270 NEXT A
280 SAVE N$,B,&4000,96,0
```

The 12 DATA lines must each contain 8 numbers separated with commas. This is where you type the widths obtained from your measurements. Be very careful to check that the numbers are correct. The last two numbers, which you will not have measurements for, can be set to any value (suggest same value as space).

Save the BrunWord file using the ESC A command which will save it as an ASCII file so that it can be used directly by BASIC. Choose a file name that will remind you of the font. e.g. STARSANS for Star Sanserif font.

Press ESC |BASIC to reset the computer. BEWARE any data in BrunWord will be wiped out with this command. Type RUN "STARSANS" (or whatever name you have used), and the table file will be generated and saved back to your disc.

8.3. Table for 24 Pin Printers

The procedure is just the same as for 9 pin printers but line 240 of the BASIC programme needs to be changed, as below, and you must name your file TABLE50, TABLE51..... TABLE59, according to the ESC k number in your printer manual.

```
240 K=(K/2)+1
```

If your 24 pin printer manual gives the character widths, then these can be typed into the DATA lines just as they are. In this case use:- 240 K=K+1

9. Other Mk 4 Additions

The Mark 4 ROM module has a number of important improvements. Some are purely operational within the programme and others provide extra facilities for the user.

9.1. Tabulation

The automatic formatting utility of the Mark 4 ROM has been extended so that it now recognises the Absolute TAB character (SHIFT f0). With previous versions of the ROM it is necessary to turn off automatic formatting before tabulation and then turn it on again after. This is no longer necessary. (Note:- Absolute TABs cannot be used with Headline).

Two new features have also been added that make tabulation very easy.

AUTO TAB If automatic formatting is ON (J11 or J15) and if a line has an absolute TAB as the very first character, then the programme will place an absolute TAB at the end of every sequence of two or more spaces in that line prior to printing the line. The line of text in the file is left unchanged. This is illustrated in LETPAT.241 which is stored in the ROM.

This has the same effect as manually placing an absolute TAB before each item in the line.

>J32 INCODE J32 instructs the programme to automatically tabulate all following lines until a new justification is set. Following >J32 the programme will place an absolute TAB at the end of every sequence of two or more spaces in each line, prior to printing the line.

This justification mode can only be entered within the text and cannot be used with Headline.

These new facilities make layouts much easier with the Mark 4 ROM. Rather than needing to place an absolute TAB at every critical position along the line, either one absolute TAB is placed at the start of the each line requiring to be tabulated or >J32 can be set.

>J19 INCODE J19 instructs the programme to justify all lines with more than 10 characters. This is useful for printing a list of items such as an index. This justification mode can only be entered within the text and cannot be used with Headline.

9.2. Headline Tabulation

The absolute TAB cannot be used with Headline. However, the Mark 4 ROM contains two special fonts that are intended primarily to solve this problem. MFIXTYPE and MFI XLINE are both fixed spacing fonts designed as far as possible to be the same as MIDTYPE and MIDLINE respectively. Fixed spacing fonts can never look as good as proportional fonts but tabulating a mixture of numbers and letters can be very tricky with a proportional font.

The idea is that the bulk of the letter or report should be printed in the proportional font, and the font changed to the fixed spacing equivalent just to print the tabulations. This is illustrated in LETPAT.92 which is stored in the ROM.

9.3. File Loading

The Mark 2 ROM always loads a file from disc into the file area whenever data is already in the work area. This procedure is improved with the Mark 4 ROM so that you are now given the option to clear the work area.

This makes it much faster in the event that you forget to clear the work area but does not overwrite your data without giving a warning.

9.4. Alternate Characters

A common typing mistake is where adjacent characters are the wrong way round. CTRL A has now been programmed to swap over adjacent characters, when you are in the editor.

9. As You Type Spell Check

BrunWord has always had the ability to check a single word by pressing the f3 key. This has now been extended to operate automatically every time a key is pressed that indicates the end of a word. If the word is found in the dictionary then no action is taken but, if it is not found, then the computer will 'beep'.

There is no ON/OFF switch. If you want to be warned of possible spelling errors while you are typing, then simply ensure that the sound volume control, on the back of the keyboard, is turned up so that the beep can be heard.

The maximum typing speed that it can follow will depend on how much work the main word processor is doing. The spelling checker on its own can actually check 4000 words in one minute which is 20 times faster than anyone has ever typed. So the 'As You Type' only takes 5% of the computing power (incredible!) but... very fast typing at the start of a long document can take the CPU past its limit and BrunWord then handles two or even three characters together, which might prevent the spelling checker from getting its 5% look.

In simple terms, this means that every word will be checked when you are typing near the end of a document, however fast you type, but bear in mind that when inserting text near the start, you may need to type just a little slower. A fast typist with a good rhythm types words in patterns, usually leaving a longer gap after the space bar. This is just right for the 'As You Type' and will give the very fastest response.

The system that we use goes like this. Typing away and the computer beeps. Stop, correct the error, press f3 to verify the correction, and resume typing. If the computer beeps and you think the word is spelt correctly or you are not sure, move the cursor back onto the error and press f3, then H for Help. If after viewing the help list you are 100% confident that the word is correctly spelt then press S for Save to save the unknown word to DICT5. Then continue typing.

When you have finished do an overall spelling check <ESC> X R X. Any printer INCODE sequences can also be saved to DICT5 but doubtful words should be left out. Finally save DICT5 to your current work disc <ESC> X S Y. Next time you work on the file load DICT5 from the disc <ESC> X L Y, and you will not need to make the same decisions.

You will find that your typing and your spelling both become more accurate because of the instant complaint at any errors. However, you must always read what you have typed, and remember that it only takes a few seconds to do a final spelling check before printing.

10. PC Compatible Files

This routine was programmed purely for the convenience of Brunning Software and does not officially exist. However, we have had a number of requests, for such a routine, in the years since our Mk 1 ROM was released and have decided to provide the details. We cannot answer any questions about this routine, but these instructions are accurate and the routine is reliable.... (If you wish to read CPC discs on a PC then YDISC with BrunWord PC is the recommended way).

This routine uses a simplified method of writing to a PC formatted 3.5 inch disc. ***IT EFFECTIVELY ERASES ANY OTHER FILES ON THE DISC***, even though they may still appear when the disc is catalogued with DIR, using a PC computer.

It will only read and write to a 3.5 inch that has been formatted as a single sided 360K PC disc. It reads the first byte of the PC allocation table on the disc and if this is not &FO it will abort with 'UNKNOWN'. It is unlikely for anyone to use a 3.5 inch single sided disc for normal use (half capacity!) and this safeguards normal PC discs against accidental erasure.

The idea is that the single sided discs are used purely to read or write just one file and this is always the first entry in the directory and always starts at the first 'block'. The routine assumes that anyone using the correct disc has accepted that the disc can be erased by the routine.

The first task is to format a 3.5 inch disc as single sided 360K using a PC computer. This is achieved by creating a special startup disc for the chosen PC by adding or changing the DRIVPARM directive in the CONFIG.SYS file. To set up drive B for this special format use DRIVPARM=/d:1/t:80/h:1/f:0 Then format a disc in drive B in the usual way. ***FINALLY USE THE PC TO SAVE ONE FILE TO THE DISC*** if this is forgotten then the PC will give a read error.

Saving to the disc is very straightforward. Enter BrunWord in the usual way with |BW and load a file into BrunWord in the normal way from a CPC 3 inch or 3.5 inch disc. ***REMOVE THAT DISC*** and insert a PC single sided 3.5 inch disc.

Press <ESC> then J and the programme will respond with 'UNKNOWN' to deter the uninitiated. Press P then C and 'Load or Save?' will be displayed. Press S to save the file in the work area to the PC disc in an uncleaned ASCII format. (i.e. any special BrunWord characters are included).

A file can also be imported from a PC in much the same way. Firstly use the PC computer to fully erase the special disc, with ERASE *.* (this is very important!). Then save the file to the disc in the normal way. It should ideally be an ASCII text file but ESC J does not discriminate.

To read the PC disc on your CPC, enter BrunWord in the usual way with |BW and insert the PC disc. Press <ESC> J P C L and the file will be read into the BrunWord word area just as if it was being read from a normal CPC disc.

Dear BrunWord User,

As I prepared to test the first batch of mark 4 ROM modules I received the Christmas newsletter from the United Amstrad User Group. It seems that Arnor have gone out of business. I find this sad, not because I owe them any sympathy, but because I know too well the difficulties in the software market place. Too many people think of pirated software as acceptable, the usual justification being 'I could not afford to buy it so there is no loss'. But what they really mean is that they would only be able to purchase one or two programmes instead of the pile that stands beside their computer.

What pirating does is to put the small software companies out of business. The large companies can afford the risk of the advertising investment to stimulate their sales, while small companies have to rely more and more on recommendation. These days a recommendation tends to be a free gift.

Over the last two years I have been the focus of an onslaught of hostility. Fortunately, I am able to assess this with a detached mind which gives me a great deal of protection. Brunning Software will never cease to trade, it is not a limited company and the base line running costs are zero.

I have a system of 'blame approximation' by applying lateral thinking to the question 'Who would benefit'. In the case of Arnor it seems that the people who shouted the loudest about the pros of Arnor's word processor, have the greatest benefit from the collapse. However, life is seldom that simple. People who use pirated Arnor software already have their programmes.... But what about the people who have made a profit from selling pirate copies? That impending jail sentence is no longer a problem!

So, to the real purpose of this letter. I have evidence that the BrunWord ROM has been copied, and evidence that the mark 4 is eagerly awaited.....

As always each mark 4 ROM is allocated a unique serial numbers which is registered to the purchaser. 90% of my customers have been on the wagon for years and are fully trusted by me, but please help..... if you sell your ROM or pass it on for any reason please let me know the name and address of the new owner.

Happy word processing,

Yours sincerely,

A handwritten signature in black ink that reads "Peter Brunning". The signature is written in a cursive, flowing style with a large initial 'P' and a long, sweeping underline.